



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,109	01/24/2005	Yasuji Taketsuna	122487	9497

25944 7590 04/28/2005

OLIFF & BERRIDGE, PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

PRESTON, ERIK D

ART UNIT	PAPER NUMBER
----------	--------------

2834

DATE MAILED: 04/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SM

Office Action Summary

Application No.

10/522,109

Applicant(s)

TAKETSUNA ET AL.

Examiner

Erik D. Preston

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03/15/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 01/24/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuruhara (US 6169344 supplied by applicant) in view of Kikuchi et al. (US 6515384 supplied by applicant).

With respect to claim 1, Tsuruhara teaches a motor for a vehicle comprising: A rotor (Fig. 1, #31) rotating around a horizontal rotation shaft (Fig. 1, #114); a stator core (Fig. 1, #111) having a plurality of slots (Fig. 1, #112) in a direction of said rotation shaft in a manner facing a peripheral surface of the rotor; a stator coil (Fig. 1, #113) wound inside said slots; a cooling passage (Fig. 1, #7); a feeding means (Fig. 2, #52) for feeding the cooling liquid through said cooling passage; and a discharge portion (Fig. 1, # 27) of said cooling liquid provided in an uppermost portion of said cooling passage, but it does not teach the cooling passage formed such that said stator coil comes into contact with a cooling liquid. However, Kikuchi teaches a cooling passage that encompasses stator coils (Fig. 1, #12). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the motor of Tsuruhara in view of the cooling passages as taught by Kikuchi because it makes it possible for the slots to form

Art Unit: 2834

liquid thereby cooling the coils accommodated therein (Kikuchi, Col. 1, Lines 19-22 & 48-50).

With respect to claim 2, Tsuruhara in view of Kikuchi teaches the motor of claim 1, and Kikuchi teaches said cooling passage comprising slots with openings that are covered with sealing members (Fig. 3, #14)

With respect to claim 3, Tsuruhara in view of Kikuchi teaches the motor of claim 2, and Kikuchi teaches a supply portion (Fig. 1, #25) of said cooling liquid provided in a lowermost portion of said cooling passage.

With respect to claim 4, Tsuruhara in view of Kikuchi teaches the motor of claim 3, wherein the feeding means includes pipes (Col. 7, Lines 27-36) connected to said discharge portion and said supply portion respectively, and supply means for supplying said cooling liquid discharged from said discharge portion to said supply portion, and said motor further comprises prevention means (the solid walls of the pipe (which inherently exist in the pipes as taught by Tsuruhara since it is not disclosed that they leak)) for preventing leakage of said cooling liquid, provided in said pipe.

With respect to claim 5, Tsuruhara in view of Kikuchi teaches the motor of claim 4, wherein said supply means is implemented by a pump (Fig. 2, #52) circulating said cooling liquid, said pipe is provided with storage means (Fig. 2, #51) for storing said cooling liquid in such a manner that said cooling liquid is in contact with air (even though the contacting of the cooling fluid in the tank with air is not explicitly taught it is inherent in the type of tank that is used), and said prevention means is provided at some portion of the pipe from a protruded outlet of said pump to an inlet of said storage means.

With respect to claims 6 & 7, Tsuruhara in view of Kikuchi teaches the motor of claim 5, wherein said prevention means is provided in both the discharge and supply portions.

Claims 8-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuruhara (US 6169344 supplied by applicant) in view of Kikuchi et al. (US 6515384 supplied by applicant) further in view of Kimura et al. (US 20020145353). Tsuruhara in view of Kikuchi teaches the motor of claims 1-7, but doesn't teach that the motor is implemented as a distributed winding motor. However, Kimura teaches a motor that has distributed windings (Paragraph 4). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the motor of Tsuruhara in view of the windings as taught by Kimura because they make it possible to bring the induced voltage waveform closer to sinusoidal waveform by improving the stator wiring layout and to reduce distortion rate (Kimura, Paragraph 4).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 4994700 A, US 6570277 B2, and US 20040135441. All of the above are motors with cooling channels inside the slots of a stator.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erik D. Preston whose telephone number is (571)272-8393. The examiner can normally be reached on Monday through Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571)272-2044. The fax phone

Art Unit: 2834

number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



04/22/2005



BURTON S. MULLINS
PRIMARY EXAMINER